

**Bay Area Air Quality Management District
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**Proposed Amendments To
BAAQMD Regulation 3: Fees and
Regulation 5: Open Burning**

Staff Report

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STAFF REPORT

PROPOSED AMENDMENTS TO BAAQMD REGULATION 3: FEES AND REGULATION 5: OPEN BURNING

EXECUTIVE SUMMARY

Regulation 5 regulates open burning in the Bay Area. The regulation is the successor to Regulation 1, which was the first regulation ever adopted by the BAAQMD. Regulation 1 was adopted in 1957 primarily to regulate open burning of trash, a common practice at the time. The regulation was subsequently amended several times and, in 1980, was recodified as Regulation 5. The proposed amendments to District Regulation 5 would add new requirements that primarily affect prescribed burning activities in the Bay Area. Prescribed burning is controlled burning to achieve planned natural resource objectives. Many public and private land managers responsible for undeveloped Bay Area open space have now adopted prescribed burning as one of the most appropriate means to manage the ecosystems found on that land. Prescribed burning is a substitute for the seasonal fires that typically affected this land before the modern era. However, because much of the area that surrounds undeveloped land is now heavily populated, the smoke from increased prescribed burning must be carefully regulated in order to protect public health and air quality. Because of the increased reliance on prescribed burning as a land management tool throughout California, the California Air Resources Board updated its smoke management guidelines on March 23, 2000. These guidelines are now called the "Smoke Management Guidelines for Agricultural and Prescribed Burning," though agricultural burning is defined to cover a much broader range of open burning. These amendments to Regulation 5 are necessary to implement a new smoke management program for prescribed burning in the Bay Area. The proposed amendments follow much of what is included in the ARB Guidelines for prescribed burning.

Open burning in the Bay Area includes burning of marshland to manage the acreage for wildlife habitat. A number of these burns, called Marsh Management fires in the proposed amendments, are conducted yearly in the District, primarily in southern Solano and Napa Counties. The proposed amendments would, effective June 1, 2002, require persons conducting these burns to: (1) submit a smoke management plan at least 30 days prior to a proposed burn and receive APCO approval of the plan before burning; (2) also at least 30 days prior to a proposed burn, submit a written determination of the necessity of each burn from the California Department of Fish & Game (DFG) to the APCO for verification; and (3) report the acreage and tonnage actually burned to the APCO no later than 12:00 p.m. the day after burning occurs. In addition, the burner must receive an acreage burning allocation from the APCO prior to burning.

The proposed amendments to Regulation 3 would add a new fee schedule, Schedule R, for certain open burning activities. The Schedule R fees are intended to recover about 22%, or \$126,000, of the District's budgeted \$582,000/year cost to develop, implement

and administer the District's new smoke management program for prescribed burning. The proposed burning fees would primarily apply to Marsh Management and Wildland Vegetation Management fires (i.e., marsh burning and prescribed burning activities). Four other fire types defined as prescribed burning would also be subjected to the new open burning fees if the fire is expected to exceed 10 acres in size or burn piled vegetation cleared or generated from more than 10 acres of land. These fire types include Forest Management fires, Range Management fires, certain Hazardous Material fires, and Crop Replacement fires for the purpose of establishing an agricultural crop on previously uncultivated land.

Other proposed amendments would: (1) modify the compliance standards to include certain existing requirements found in other provisions of the regulation; (2) restrict and clarify existing burn hours for all allowable fires; (3) require a person to attempt to cease burning upon District staff notification of three confirmed complaints; (4) require tree trunks and stumps to be cut or split before burning to prevent overnight smoldering; and (5) with conditions, allow fire training burns at night and public exhibition burns on no-burn days. These amendments would improve the clarity and enforceability of Regulation 5, and address open burning issues identified since 1994 when the regulation was last revised. These measures are also intended to minimize the potential adverse smoke impacts from open burning allowed in the District and reduce variance costs.

The proposed amendments will improve management of smoke and reduce population exposure to emissions of particulate matter (including PM₁₀ and PM_{2.5}), carbon monoxide, and volatile organic compounds (VOC's). However, because the proposed amendments do not restrict the total acreage or allowable types of material to be burned and because increases in the amount of prescribed burning are projected, no overall emissions reduction is expected from the proposed amendments. The amendments are expected to provide improved burn acreage data, which should improve the District's ability to estimate emissions and quantify any reductions.

Pursuant to the California Environmental Quality Act (CEQA), the District prepared an initial study to determine the potential environmental impacts of the proposed amendments. The study concluded that the proposed amendments to Regulations 3 and 5 would not result in any significant environmental impacts. Therefore, District staff have prepared a Negative Declaration for this proposed rule amendment project.

Implementation of the proposed amendments will have a significant impact on the District's resources. However, these changes are essential and necessary in order to satisfy the prescribed burning provisions of the Guidelines.

District staff conducted two scoping workshops in February and March, 2000 to discuss an initial draft of the open burning fee proposal. The proposed amendments to Regulation 5 and proposed Schedule R were discussed during two additional workshops held on August 9, 2001 in Fairfield, CA and August 10, 2001 at the District office. The primary issue raised during the workshops was the cost impacts of the fee proposal.

BACKGROUND

Current BAAQMD Requirements

The District first regulated open burning in 1957 under Regulation 1 because of its considerable contribution to Bay Area air pollution. In 1980, after several revisions and as the number of other District regulations increased, Regulation 1 was recodified as Regulation 5. The last revisions to Regulation 5 were adopted in 1994.

Currently, Regulation 5 generally prohibits open burning within the District except for specific exceptions that conditionally allow fires on permissive burn days at certain times of the year. The exceptions or allowable fire types include both agricultural and non-agricultural fires.

For each day of the year, the District issues either a permissive burn day or no-burn day notice. District staff in the Meteorology and Data Analysis Section of the Technical Services Division makes this determination based on the meteorological conditions forecasted and criteria for the San Francisco Bay Area Air Basin. The criteria are based on the ability of smoke to rise and dissipate without causing ground level impacts. The burn day forecast is usually available by 3:00 p.m. for the following day. However, if conditions are warranted for a delayed burn decision, the forecast is made by 7:30 a.m. the following day. A permissive burn or no-burn day notice is issued for three forecast zones in the District, the North, South and Coastal Sections. In addition, for burns above elevations of 2000 feet in a section with a no-burn decision, a permissive burn day will be declared if specific meteorological criteria are met.

Purpose

Assembly Bill (AB) 16 (Ketchum), Chapter 1579 of the Statutes of 1970, directed the California Air Resource Board (ARB) to establish guidelines for the control and regulation of agricultural burning by the air districts in California (see California Health & Safety Code Sections 41850 *et seq.*). Originally, agricultural burning was defined as open outdoor fires used in agricultural operation in the growing of crops or the raising of fowl or animals. In 1971, pursuant to AB16, the ARB established Agricultural Burning Guidelines for the burning of waste produced during agricultural operations (these Agricultural Guidelines can be found in sections 80100 *et seq.* of Title 17 of the California Code of Regulations). The Agricultural Burning Guidelines have been modified many times since 1971. Major changes include amending the definition of agricultural burning to include open burning for the improvement of wildlife and game habitat and again for wildland vegetation management. The Agricultural Burning Guidelines were also amended to improve the quality of data reported by air districts and to improve the management of smoke from rice straw burning in the Sacramento Valley (the Sacramento Valley Basinwide Agricultural Burning Plan).

State law prohibits agricultural burning without a permit issued by agency designated by the ARB to issue permits for the area in which the burning is to take place.

On March 23, 2000, ARB adopted amendments to the State's Agricultural Burning Guidelines. The new Guidelines, which are now titled "Smoke Management Guidelines for Agricultural and Prescribed Burning," were developed by ARB staff to improve California's smoke management program for several reasons:

- Increases of prescribed burning are planned by land management agencies on public and private lands throughout California over the next two decades. Though significant increases may occur in many areas in California, only minor increases above current levels are expected in the Bay Area. The planned increases are intended to correct unhealthy wildland ecosystems and reduce the risk of catastrophic wildfires in areas with excessive vegetative fuel loads, which are the unintentional result of past fire suppression policies and strategies. More effective smoke management is needed to minimize or prevent the potential public health and air quality impacts posed by these increases.
- Smoke emissions from wildfires and increased prescribed burning threaten California's ability to meet requirements for health-based air quality standards for fine particulate matter (PM_{2.5}), coarser particles (PM₁₀) and new federal regional haze requirements that call for improvements in visibility in designated Class 1 Areas (national parks, monuments, wilderness areas, etc.).
- Closer communication and collaboration between prescribed burners, ARB and local air districts is needed to prevent short-term, high-impact smoke episodes caused by prescribed burning activities.
- Population growth and increased urbanization of rural areas and agricultural lands have increased the potential for smoke impacts from prescribed burning and agricultural burning. Combined with the expected increases in prescribed burning on neighboring public lands and in urban-wildland interface areas, more intensive management of these fires is needed to reduce the potential for smoke impacts.

The effective date of the amended Guidelines is March 14, 2001. One of the major changes requires local air districts to develop and implement a smoke management program that meets specific requirements of the Guidelines. This new program is also expected to be consistent with federal EPA's *Interim Air Quality Policy on Wildlands and Prescribed Fire*. The policy is designed to prevent or minimize smoke impacts from prescribed burning activities, and help the State meet federal requirements associated with EPA's national air quality standards for particulate matter and regional haze program, while at the same improving the quality of wildland ecosystems through the use of prescribed burning.

These Amendments

The District is exempt from the state smoke management guidelines because the legislation governing the state guidelines grandfathered existing open burning programs through California Health and Safety Code section 41864. That section grandfathers any program, such as the BAAQMD program, “in effect for five or more years prior to September 19, 1970.” However, the District committed to satisfying the prescribed burning provisions of the new Guidelines to ensure statewide consistency, to ensure consistency with federal requirements and policy, to address within the Bay Area the same concerns that prompted revision of the state guidelines, and to address compliance and enforcement issues identified since 1994, when Regulation 5 was last amended.

The proposed Regulation 5 amendments include revisions that are an essential component of the District’s new smoke management program for prescribed burning, including marsh burning. The intent of these revisions is to incorporate the prescribed burning provisions of the amended Guidelines necessary to ensure successful implementation of this new District program. In addition, several amendments are proposed to address open burning issues identified since 1994 when Regulation 5 was previously amended. Other proposed amendments to Regulation 5 would improve the enforceability of the Regulation by clarifying existing and eliminating obsolete regulatory language.

The new open burning fees proposed in Regulation 3, Schedule R are intended to recover a portion of the District’s cost of approximately \$582,000/year to develop, implement, and administer the proposed smoke management program for prescribed burning. This cost is based on the minimum level of District resources necessary for the program. These amendments to Regulation 3 are consistent with Health & Safety Code Section 42311.2, which governs the establishment of fees for these burning operations.

The District and members of the California Air Pollution Control Officers Association have explored other program funding options to offset the cost of new fees. However, to date, these efforts have not yielded any immediately available revenue sources to fund the program.

PROCESS DESCRIPTION

Open burning generally refers to the combustion of a substance or fuel outdoors in the ambient air. Under conditions when the combustion process is incomplete, smoke is produced as an undesirable by-product of the burning event. The amount of smoke produced in open fires varies as the fuel goes through the four phases of burning described below.

Pre-ignition Phase. In this phase, the fuel is heated and any water vapor moves to the surface and escapes. Pyrolysis (chemical decomposition) begins as the fuel dries and

its internal temperature rises, releasing a stream of unburned combustible organic gases. Moderate smoke is produced when water vapor and unburned organic gases condense.

Flaming Phase. In this phase, the fuel temperature rises rapidly and pyrolysis accelerates to a point where combustion occurs. Combustion is the result of a chemical process called oxidation where hot unburned organic gases rapidly react with available atmospheric oxygen, producing light (as flames), heat, carbon dioxide, and water vapor. Temperatures in this phase range from 600 to 2500°F. Some smoke is also produced as some of the pyrolyzed substances cool and condense without passing through the flame zone or from being partially oxidized in the flaming zone. However, more smoke is produced as the efficiency of combustion decreases.

Smoldering Phase. In the smoldering fire phase, the reaction rate of the fire has slowed such that the concentration of gases above the fuel is too low to sustain a flame. Consequently, the temperature drops and the evolving unburned organic gases condense into tar droplets that appear as smoke. In this phase, smoke emissions are twice those of the flaming phase and most of the smoke consists of PM₁₀ emissions.

Glowing Phase. In this final phase, all of the flammable organic gases have been driven off and more oxygen in the air can reach the fuel surface. The fuel, now a solid black charcoal, begins to burn with a characteristic yellow glow and no visible smoke. Carbon monoxide is the principal pollutant emitted until the temperature drops or until only noncombustible gray ash remains.

In essence, the conditions that determine complete combustion during open burning include the combustion temperature, the residence time of the reactants at the combustion temperature, and the amount of oxygen available. Less smoke is produced when a higher temperature is achieved and maintained. Significant factors affecting the combustion temperature are the fuel moisture content and the nature of the fuel.

Smoke is, therefore, a complex mixture of two types of air pollutants: particulate matter and gases. Particulate matter emitted during open burning consists of solid or liquid microscopic particles of widely ranging size. The particles produced by incomplete combustion include soot or unburned carbon, ash (which results from burning unburnable minerals in the fuel), and a variety of condensed organic vapors. Most smoke particles (>90%) are very small, with an aerodynamic diameter less than 10 microns (10⁻⁶ meter). Known as PM₁₀, these particles are a cause for concern because they are small enough to be inhaled and can remain airborne for long periods of time affecting human health and visibility. PM₁₀ includes a fraction of fine particles with a diameter less than 2.5 microns called PM_{2.5}. These smaller particles can cause more significant health effects because they can be inhaled more deeply into the lungs.

Some PM₁₀ particles in smoke are formed from the gaseous products of combustion as a result of condensation, absorption and other chemical processes. These particles include

some nitrates and sulfates, and complex organic compounds that contain known or suspected human carcinogens.

The primary gaseous or vapor-phase pollutants produced by incomplete combustion during open burning include carbon monoxide, sulfur dioxide, nitrogen dioxide, and numerous organic compounds. Some of the organic vapors released are precursors to the formation of ozone, the main constituent of ground level smog.

Wildland Vegetation Management Fires

Prescribed burning is the controlled application of fire to wildland fuels that allow the fire to be confined to a predetermined area and achieve planned natural resource objectives. As a land treatment option, its use reduces the hazards of and potential for destructive wildfires, controls insects and disease, improves wildlife habitat and forage production, increases water yield, maintains natural succession of plant communities, and reduces the need for pesticides and herbicides in certain applications. A written prescribed burn plan includes a prescription that describes both the acceptable range of weather, moisture, fuel, and fire behavior parameters, and the ignition method to achieve the desired effects. All Wildland Vegetation Management fires are conducted as prescribed burns.

In the Bay Area, prescribed burning occurs in almost every county within the District's boundaries (the exception being the city and county of San Francisco). Over the last three years, the majority of prescribed burns occurred in Marin and Contra Costa counties, followed by Santa Clara, Alameda, San Mateo and Napa counties. These fires were primarily conducted on public lands during the summer months from June through September, although several burns in Marin County also occurred during April, October, November and December.

The primary fire agencies or land management agencies that conduct prescribed burning in the District include the California Department of Forestry & Fire Protection (CDF), California Department of Parks & Recreation, Marin County Fire Department, U.S. Fish & Wildlife Service, and the National Park Service. Other notable burners that are allowed to conduct prescribed burns through a cooperative agreement or contract involving a state or federal agency include the East Bay Regional Park District and the Marin Municipal Water District.

Prescribed burning acreage in the District is not currently allocated nor is there a standard that specifically limits burnable acreage. However, District staff reviews each prescribed burn plan and limitations may be imposed as a condition of approval. In this context, it is accurate to say that burning acreage limits are in effect already being used by District staff as a smoke management tool for prescribed burning.

Marsh or Tule Burning

Historically, marsh or tule burning in the Bay Area has been conducted to enhance wildlife and game habitat in the Sacramento-San Joaquin River estuary region of southwestern Solano County and southern Napa County. This region, also called the west "Delta", includes low-lying land areas and islands positioned in and around the waterway, and a variety of natural tidal marshes and man-made seasonal wetlands partitioned by levees or dikes. Characterized by very moist soils and unique plant communities, these marshlands provide critical habitat for a variety of birds, fish, invertebrates, reptiles, amphibians and mammals.

In the Delta, most marsh burning occurs within the boundaries of the Suisun Resource Conservation District (SRCD) by landowners, leaseholders or property caretakers. The burns are set on private farmlands or on lands managed as private, commercial hunting clubs, where members are permitted to shoot wildlife and waterfowl such as elk, duck and pheasant for a fee. The fee to lease a duck "blind" on a private club ranges from \$1,000 to \$1,600/year. California Department of Fish and Game (DFG) staff also conducts marsh burning to manage wildlife and game habitat on public lands that the State owns in the SRCD and Napa County. DFG also charges a fee to hunt on the public lands they manage.

Marsh burning acreage in the SRCD is currently allocated by the Solano County Sheriffs' dispatch in coordination with District staff and is subject to the current burn acreage limitations in Regulation 5, Section 401.13. Three local fire districts (Suisun, Montezuma, and Cordelia) and the DFG are also involved in authorizing these fires. Marsh burning acreage outside of the SRCD is not allocated but such burning is currently limited to 100 acres/day for each property, on permissive burn days only, and with prior DFG authorization.

Marsh fires are often characterized by very heavy black smoke. The high fuel moisture and oil content inherent in marshland vegetation, especially tules, is thought to be the main factor affecting smoke generation. A primary objective of marsh burning is to set back the expansive and rapid growth of unwanted vegetation, especially tules. As a result of burning, the dominant tule community is changed in a way to encourage a succession of plant communities that supply essential habitat with food and cover for many different wildlife species.

Recently, several land management agencies with jurisdiction over marshlands in the Bay Area have contacted District staff about conducting marsh burns outside of the west "Delta" region, such as the along the southeastern shoreline of San Francisco Bay, and along the Petaluma and Napa Rivers. Potential smoke impacts from this additional burning are a cause for concern because many of these areas are near or adjacent to densely populated areas. The District expects this interest in "non-traditional" marsh burning to increase because of an environmental campaign recently initiated by watershed groups and government entities to restore the ancient tidal marshes surrounding San

Francisco Bay. Numerous wetland restoration projects are in the works and these efforts may include burning as a land management option and tool to achieve their restoration goals.

PROPOSED AMENDMENTS

This section provides a description of the proposed amendments to Regulation 5 and Regulation 3. The full text of these draft proposals can be found as Attachments 1 and 2 to this report.

Amendments to General Provisions of Regulation 5

Section 100 provides a general description of the Regulation, specifies the conditions each allowable fire type in Section 5-401 must satisfy, and describes the types of open burning or fires that are exempt from the requirements of the Regulation.

Exemptions (Section 110)

Staff are proposing a minor revision in subsection 5-110.3 to clarify that the use of flame cultivation to kill live seedling grass and weeds is not limited to orchards, vineyards and field crops.

Conditional Exemptions (Section 111)

The conditional exemptions in this section exempt certain fires conducted in accordance with a set of conditions from the general prohibition on open burning. The proposed amendments include new language to clarify that a condition, requirement or parameter stated in or imposed by a prescribed burn plan approved by the APCO may supersede any condition in this section. This language is intended to address concerns that the proposed morning burn hour limit would adversely prescribed burning.

Subsection 5-111.1

Amendments to this subsection would restrict the morning burn hours for all allowable fires by prohibiting burning before 10:00 a.m. Currently this restriction only applies to marsh burning, stubble burning and double cropping stubble fires. This measure will provide for good smoke dispersion even on permissive burn days by preventing burning when weak inversions persist until late morning. Restricting morning burn hours also reduces the fuel moisture content by allowing the sun to evaporate morning dew from the fuel surface. Low moisture content increases the combustion temperature, which optimizes combustion and decreases smoke production. A hotter fire will also contribute to smoke dispersion by causing the smoke plume to rise higher.

Subsection 5-111.2

Slight changes to language affecting the allowable afternoon hours for open burning are intended to clarify that an existing fire or visible advancing flames may not be allowed to burn additional material or fuel, and material or fuel may not be added to an existing fire after two hours before sunset.

Subsections 5-111.3 and 5-111.4

Additionally, two new conditions have been added to resolve on-going enforcement issues caused by excessive smoke from open burning. The first provision in subsection 5-111.3 is intended to reduce smoke impacts when complaints from the public are received and help reduce the possibility of public nuisance violations. This condition would give District inspection staff the authority to require a person to attempt to cease burning that day once the inspector advises the burner of three or more confirmed complaints.

A new provision in subsection 5-111.4 is intended to reduce the smoke produced from smoldering tree trunks and stumps by not allowing burning to continue into the overnight hours by requiring that they be split or cut into pieces small enough to ensure that burning the material does not produce smoke after sunset. This measure is intended to reduce the adverse smoke impacts from this activity.

Amendments to Definitions

The proposed amendments in this section clarify an existing definition, delete obsolete language in Sections 5-208 and 5-211 that are no longer used in the Regulation, and add two new definitions.

Section 5-208

Staff proposes to modify the definition of “Hazardous Material” to address an enforceability issue caused by a lack of clarity. This proposal clarifies that hazardous material means any combustible or flammable material that poses a fire or explosion hazard including, but not limited, to vegetation cleared to create or maintain a firebreak around a structures on a property as required to comply with PRC section 4291 to reduce the risk of a wildfire. This proposal is also intended to help burners and local fire agencies understand that Section 5-401.6 essentially regulates two types of Hazardous Material fires: those that are related to PRC section 4291 and those that are not.

Section 5-213

In Section 5-213, the definition for “prescribed burning” has been expanded to be consistent with the Guidelines and reflect the needs of the District. Under this proposal, four specific fire types in the Regulation, if the fire is expected to exceed 10 acres in size

or burn piled material cleared or generated from more than 10 acres of land, would be regulated by the same requirements as prescribed burning. The affected types of burns include Forest Management and Range Management fires, Hazardous Material fires that are not related to Section 4291 of the Public Resources Code, and any Crop Replacement fire for the purpose of establishing an agricultural crop on previously uncultivated land. Each of these fires would then be subjected to all requirements for Wildland Vegetation Management fires, such as the submittal and approval of a prescribed burn plan and the proposed open burning fee.

Sections 5-221 and 5-222

Two new terms, “forest” and “marshland,” are also proposed in new Sections 5-221 and 5-222 to help clarify the regulatory requirements for Forest Management, Marsh Management, and Wildland vegetation Management fires.

Amendments to Standards

The proposed amendments in Section 5-300 are intended to clarify the compliance standards of the Regulation. To accomplish this, staff propose to include certain existing requirements for allowable fires, which are not clearly enforceable under other sections or standards of the current Regulation, in an existing standard (subsection 5-301.2) and a new proposed standard (subsection 5-301.3).

Besides specifying enforceable standards for acreage burning allocation limits, the conditions in Section 5-111 and the administrative requirements in Section 5-400 of the Regulation, these changes would subject the conditions and requirements of a prescribed burn plan or smoke management plan to an enforceable standard. This proposal would also satisfy one of the requirements of the Guidelines.

In effect, these changes would strengthen the enforceability of the Regulation and help burners understand and comply with all requirements they are subjected to. Ultimately, these changes would also help reduce the potential of smoke impacts from open burning.

Amendments to Administrative Requirements

Section 5-400 describes the specific requirements for each allowable fire type, sets forth conditions an applicant must satisfy to qualify to burn debris cleared from land in agricultural use, and describes the requirements for granting emergency waivers from these requirements. Section 5-400 also includes the notification requirements for certain allowable fires, and additional requirements for prescribed burning and the occasional fire set for filmmaking.

No substantive changes are proposed for Section 5-403 (Agricultural Land Use) and Section 5-404 (Emergency Waivers). Only minor clarifications are proposed to improve the enforceability of these sections. In addition, staff propose to delete the requirements

in Section 5-405 and subsection 5-401.14 for Waste Propellant, Explosives and Pyrotechnics fires. These sections have expired so are no longer relevant.

Allowable Fires (Section 5-401)

There are several substantive amendments proposed in this Section. The first proposal, which is discussed below in Section 5-406, would expand the Prior District Notification requirements to include the remaining five allowable fire types currently not required to notify the District prior to burning: Crop Replacement, Orchard Pruning and Attrition, Double Cropping Stubble, Flood Debris, and Forest Management. The primary purpose of this proposal is to help the District satisfy the annual reporting requirements in the Guidelines. The additional information obtained would also be used to improve the District's open burning emissions inventory because the burning data would be more accurate and complete.

The remaining proposed amendments in Subsections 401.2, 401.5, 401.6, 401.7, 401.8, 401.9, 401.11, and 401.12 are minor non-substantive revisions intended for clarify and consistency in existing requirements of the Regulation.

Subsection 5-401.1

A minor revision in this section is proposed to clarify that Disease and Pest fires are a type of agricultural fire only. This proposal is also intended to reflect an existing requirement and current policy in the District's Compliance and Enforcement Division (C&E).

Subsection 5-401.3

In this section, staff propose to add specific minimum drying time periods for pruning performed between February 15 and April 30 for integrated pest management purposes. The proposed minimum drying periods, 30 days for trees and branches over six inches in diameter and 15 days for grape vines and branches less than or equal to six inches in diameter, are less than the minimum 60-day drying time condition in Section 5-111.4 for piled material. This proposal is in response to a request from the Coast Agricultural Commissioners and Sealers Association, which includes members that represent the Bay Area, who pointed out that the current 60-day drying time condition and the orchard pruning permissive burning period did not allow growers to utilize a recommended disease control practice, which is to delay or time dormant pruning to avoid times of highest disease occurrence or potential to spread.

Subsection 401.6

In this subsection, staff proposes to add a condition that must be satisfied by burners who conduct fires to dispose of materials generated to comply with an order or notice issued by a fire official pursuant to Public Resources Code section 4291. The new condition,

which states, “the material is inaccessible for removal by vehicle” reflects current District C&E Division policy and is intended to improve the enforceability of the Regulation.

At the request of FireSafe San Mateo County, staff also proposes a 9:30 a.m. morning burn hour limit, instead of the proposed 10:00 a.m. general morning burn limit, for Hazardous Material fires involving piled material. This is intended to help accommodate burning vegetation cleared by FireSafe work crews to reduce fire hazards in urban/wildland interface areas.

Subsection 401.7

Staff proposes to allow fire training burns outside of the burn hour limits in subsections 111.1 and 111.2 if the APCO is notified in writing or facsimile at least 7 calendar days in advance. This new provision is intended to address an on-going issue raised by local fire agencies in the District, where the current burn hour limits effectively prohibit fire training exercises at night unless a variance is granted. This type of training is necessary for many fire agencies in the District.

Subsection 5-401.13

Staff also propose revisions that would affect Wildlife Management fires (i.e., marsh or tule burning). Under this proposal, Wildlife Management fires would be renamed “Marsh” Management fires to help clarify the applicability of this allowable fire type. Burners would be required to comply with the proposed requirements in Section 5-410, which are discussed in more detail below, and receive written APCO approval of a smoke management plan prior to burning. We are also proposing that any person who conducts a “Marsh” Management fire in the District must receive an acreage burning allocation from the APCO prior to burning. This is a substantive change from the current Regulation because an acreage burning allocation is now only required for fires conducted in the Suisun Resource Conservation District (SRCD), and because the allocation is granted by the Solano County Sheriffs’ Dispatch. These changes are necessary for the District to be able to allocate acreage for marsh burning as part of the new smoke management program for prescribed burning and to satisfy the program requirement in the Guidelines to have a daily “burn authorization system” that includes marsh or tule burning. The Solano County Sheriffs’ Department has been consulted on this change and concurs.

Subsection 401.17

An additional proposal would allow public exhibition fires on no-burn days, such as fires for air shows. Under this proposal, the burn applicant would have to submit a written petition and receive APCO approval prior to burning instead of having to apply for a variance.

Prior District Notification (Section 5-406)

The proposed amendments in this section would require persons conducting Crop Replacement, Orchard Pruning and Attrition, Double Cropping Stubble, Forest Management and Flood Debris fires to notify the District prior to burning. This will allow staff to develop more complete emissions estimates from these types of agricultural burns. Other proposed amendments would eliminate verbal notifications as a compliance option. District experience has found them to be burdensome to burners and ineffective in getting accurate and complete information. Mailed, faxed or electronic notification will be required.

Prescribed Burn Requirements (Section 5-408)

The substantive amendments proposed in this section are intended to satisfy the prescribed burning requirements of the Guidelines. In particular, the proposed changes would clarify and specify what information must be included in a prescribed burn plan for District review, and would establish new requirements for the District's daily "burning authorization system" for prescribed burning and marsh burning activities. As a significant part of the District's new smoke management program for prescribed burning, these revisions include a requirement that prescribed burners must receive an acreage burning allocation verbally from the APCO on the day of each burn prior to ignition. The District's daily "burning authorization system" will revolve around the acreage burning allocation, which will be determined by District meteorology staff each day in the morning based on that day's forecasted meteorological conditions around the District. For example, on hot, still days burn allocations might be limited to 100 acres in each of Marin, San Francisco, and San Mateo Counties (which make up the new Coastal Section) and no acres allowed to be burned in the South or North Sections of the District. In contrast, on days with good air movement and cool temperatures, up to 500 acres might be allocated in each section of the District. The allowable acreage to be burned will be allocated by the burn coordinator in the Compliance & Enforcement Division according to the number of acres to be burned, and the location of burn sites. Ignition times will be staggered. All prescribed and marsh burning activities will be subjected to the requirements of this new system.

Staff also proposes to modify a provision that would prohibit prescribed burning on a no-burn day and specify how prescribed burners get permission to burn on a permissive burn day. Currently in subsection 5-408.2, permission to burn on a no-burn day is governed by the 48-hour forecast decision. This means that if the District gives a burner a "go" decision 48 hours before a proposed burn date, then they have permission to burn on that date even if due to drastic weather changes, it turns out to be no-burn day and the meteorological conditions are not conducive for burning. Under this proposal, in order to get the APCO's permission to conduct a prescribed burn on a permissive burn day, they would first have to receive an acreage burning allocation from the APCO on the day of a proposed burn. As a result, the acreage allocation governs how much, when and where prescribed burning could occur. When District meteorology staff determine that the

conditions are such that no prescribed burning is desirable, a no-burn day notice is issued and the acreage burning allocation will be zero.

The proposed revisions would also require prescribed burners to report to the APCO the total acreage and tonnage of vegetation actually burned no later than 12:00 p.m. the day after burning occurs. This proposal is necessary for successful implementation of the District's daily "burning authorization system" because this critical information will be used by District staff to determine how many acres should be allocated for prescribed burning and marsh burning on the subsequent day. This proposal is a substantive change from the current requirement, which allows up to 30 days after completion of the burn project to report the acreage burned.

To be consistent with another requirement of the new Guidelines, staff proposes to require prescribed burners to submit a post-burn evaluation within 30 days after completion of the burn project that addresses whether or not the vegetation management objectives of the project were met and describes the observed smoke behavior. This proposal will provide District staff with valuable information that would be used to evaluate subsequent burn prescriptions and to determine future acreage allocations for prescribed burning.

Sometimes, a naturally ignited wildfire occurs in an area that has an exceptionally high fuel load, so that a decision is made by a fire official to allow the burn as a wildland resource management tool. An additional proposal would add new requirements for these naturally ignited wildfires, so that they can be considered a type of prescribed burning. When these wildland areas that could be burned exceed 10 acres in size, staff propose to require the fire official who would then manage the burn to register the potential project with the APCO annually, with updates as wildfires or changes to the project occur. In addition, the burn project would be subjected to the prescribed burning fee requirements in proposed Regulation 3, Schedule R. The proposed effective date of this proposal is June 1, 2002.

Filmmaking Burn Petition (Section 5-409)

In order to address an issue raised by Travis Air Force Base, which burn materials as part of their annual air show, staff proposes to expand the filmmaking requirements in this section to apply to public exhibition fires. This proposal would allow a person to conduct a public exhibition fire on a no-burn day provided the APCO approves a written petition submitted by the burner, the APCO is notified on the day of the burn prior to ignition, and the written approval is available at the burn site for inspection by District staff. The proposed revisions would rename this section "Filmmaking and Public Exhibition Burn Petitions" from "Filmmaking Burn Petition " to reflect this change. The proposal is expected to reduce a number of recurring variances involving public exhibition burns by allowing these fires on no-burn days provided certain conditions are met. This would reduce the amount of time and resources spent in the variance process and provide a way to streamline and improve the District's management of this type of allowable fire.

Wildlife Management Burn Requirements (New Section 5-410)

The proposed requirements in this Section are necessary for the District to be able to allocate acreage for marsh burning as part of a daily “burn authorization system” and to ensure the successful implementation of the District’s new smoke management program for prescribed burning. These revisions would also enable the District to be consistent with several smoke management program requirements in the new Guidelines.

Under this proposal, any person who wants to conduct marsh or tule burning would be required to satisfy two requirements at least 30 days prior to a proposed burn in order to qualify for an acreage burning allocation from the APCO. The first requirement is to submit a District-approved smoke management plan to the APCO. The second requirement would compel any person conducting a burn to submit a written determination of the necessity of each burn from the California Department of Fish & Game (DFG) to the APCO for verification. DFG would also have to certify the determination and explain why available alternatives to burning could not achieve the management objectives. Only after the APCO verifies the necessity determination would DFG be able to approve the burn. The proposed effective date of this proposal is June 1, 2002.

The proposed revisions would also require marsh or tule burners to report to the APCO the total acreage and tonnage of vegetation burned no later than 12:00 p.m. the day after burning occurs. This proposal is necessary for successful implementation of the District’s daily “burning authorization system” because this information will also be used by District staff to determine how many acres should be allocated for marsh burning and prescribed burning on subsequent days. The proposed effective date of this proposal is also June 1, 2002.

Open Burning Fees (Section 5-411)

This new section is proposed to clarify that Marsh Management fires (marsh or tule burns), Wildland Vegetation Management fires (prescribed burning), and those fires that meet the definition of prescribed burning in the Regulation are subject to the proposed fee requirements in Regulation 3, Schedule R. Those fires include any Forest Management fire, Range Management fire, Hazardous Material fire that is not related to PRC section 4291, and any Crop Replacement fire for the purpose of establishing an agricultural crop on previously uncultivated land fire that is expected to exceed 10 acres in size or burn piled vegetation cleared or generated from more than 10 acres of land. An example of the latter is land clearing in eastern Napa County for vineyards. The proposed amendments are also intended to serve as a convenient cross-reference between Regulation 5 and proposed Schedule R requirements.

Amendments to Monitoring and Records Requirements

Under Section 5-501, the current regulatory language requires open burning records for Waste Propellant, Explosives and Pyrotechnics fires. However, these requirements have been obsolete since January 1, 1997, when a previous revision went into effect prohibiting this type of fire. This type of fire was primarily conducted by United Technologies Corporation (UTC) to dispose of waste rocket propellant. UTC has since changed to an alternative, non-burning method of waste disposal.

The proposed amendments in this section would delete the obsolete regulatory language for Waste Propellant, Explosives and Pyrotechnics fires, and impose new record keeping requirements for prescribed burning and marsh burning activities. If subjected to this proposal, a person who conducts a Wildland Vegetation Management fire (prescribed burning) or a Marsh Management fire (marsh or tule burning) would be required to maintain specified records on a daily basis, retain the records for at least twelve months and make the records available upon request. The information required by this proposal is important for District quality assurance purposes such as the verification of actual burn acreage and proper payment of open burning fees, and to assist in staff's evaluation of the methods or techniques used by burners to estimate burn acreage. The proposed effective date of this proposal is also June 1, 2002.

Proposed Amendments to Regulation 3 and Proposed Schedule R

Proposed Schedule R would add a new fee schedule for certain open burning activities and is intended to recover a portion of the cost of the District's new smoke management program for prescribed burning, which is estimated to be \$582,000/year. Based on the fee requirements proposed in new Schedule R and authorized prescribed and marsh burning acreages averaged over the last three years (1998-2000), the total projected revenue from the fee proposal is approximately \$126,000/year or about 22% of the program cost this fiscal year. This cost estimate assumes an increase in prescribed burning acreage over the current average, resulting in 25% more revenue than the current acreage would generate. However, it excludes any potential decrease in marsh burning fees due to the two discounts proposed for marsh burning conducted only during the Spring burning period.

As previously discussed, the proposed fee would primarily apply to any Wildland Vegetation Management fire (prescribed burning) and Marsh Management fire (marsh or tule burning). In addition, the proposed fee requirements for prescribed burning would apply to any Forest Management fire, Range Management fire, Hazardous Material fire that is not related to Section 4291 of the PRC, and any Crop Replacement fire for the purpose of establishing an agricultural crop on previously uncultivated land fire that is expected to exceed 10 acres in size or burn piled vegetation cleared or generated from more than 10 acres of land.

In Schedule R, staff proposes separate but similar fee requirements for prescribed burning activities and for marsh burning. For each prescribed burning project, the fee would be determined by the acreage to be burned and would range from a minimum of \$250 (for 50 acres or less) up to \$3000 (for any amount greater than 750 acres). In addition, the fee paid would be valid for one year from the burn plan approval date (i.e., when the APCO authorizes the burn in writing). Any burning after one year would be subject to a new fee.

For marsh or tule burning projects, the fee would be determined for each property by the proposed acreage to be burned and the proposed burning period(s). The fee would range from a minimum of \$250 (for 50 acres or less) to \$1000 (for more than 200 acres up to 300 acres). These types of burns are allowed in the spring and again in the fall, but the fee will be valid for a one-year period. Any burning after either one of these time periods would be subject to a new fee. In addition, staff propose a 25% discount of the marsh management burning fee when the proposed burning is only conducted during the spring burning period (which begins February 1 and normally ends March 31). This is intended to encourage burning in the spring when the weather and soil moisture content is more conducive for good smoke dispersion and less potential smoke impacts.

In response to a concern raised by the Suisun Resource Conservation District about the need to have a lower burning fee for fires less than 20 acres, staff propose a 50 % discount of the marsh management burning fee, provided the proposed acreage to be burned is less than or equal to 10 acres and the proposed burning will only be conducted during the spring. This proposal is also intended to encourage burning in the spring when the weather and soil moisture content is more conducive for good smoke dispersion and less potential smoke impacts

Also included in this proposal are requirements that all burning fees would be non-refundable and must be paid before conducting the burn. The only exception to the proposed requirement to pay “up front” would be when a fire official makes a decision to manage a naturally ignited wildfire for resource benefits (i.e., as prescribed burning). The fee for this type of prescribed burning would have to be paid no later than 10 days after the burn project is completed.

As detailed in the District’s FY01-02 budget, the cost of the new smoke management program for prescribed burning is approximately \$582,000/year. This cost is based on the following positions being dedicated to the program: six inspectors, one half of a supervising inspector, one air quality specialist, and one meteorologist. Staff believe that this is the minimum level necessary to develop, implement, and administer the new program adequately and efficiently.

Please note that the development of the proposed open burning fee proposal was based, in part, on the new prescribed burning fee recently adopted by the Governing Board of the San Joaquin Valley Air Pollution Control District (SJVAPCD). Under SJVAPCD Rule 3160, the new prescribed burning fee rate is \$5.00 per acre burned in a calendar year and is in addition to other agricultural/open burning fees found in SJVAPCD Rule 3040. The

District's proposed fee schedule is similar to the amount paid by burners in the SJVAPCD.

Other air districts in the state also have existing fees in effect for agricultural and open burning. Examples of several air districts close to the District include the Sacramento Metropolitan Air Quality Management District (SMAQMD), the Yolo-Solano County AQMD, Butte County AQMD and the San Luis Obispo County APCD. These air districts and others in the State are also currently considering a new fee for prescribed burning to recover their costs of satisfying the new Guidelines.

EMISSIONS AND EMISSION REDUCTIONS

Total estimated emissions from open burning are small compared to the overall emissions from all source categories in the District emission inventory. According to the District's 1999 base year emission inventory (BAAQMD, 2001), the estimated emissions from open burning for calendar year 2000 are 0.53 tons per day of PM₁₀, 6.05 tons per day of carbon monoxide (CO), 0.17 tons per day of nitrogen oxides (NO_x), and 0.25 tons per day of volatile organic compounds (VOC). These estimates account for less than 0.1% of the overall District emissions for PM₁₀, NO_x and VOC.

Because reliable information for estimating emission reductions from the amendments proposed is not available, staff is currently unable to quantify the emissions reduction potential of the proposal. Because the proposed amendments do not impose any new emission standards that specifically reduce emissions, and because increases in prescribed burning are projected irrespective of the proposed amendments, staff are not expecting an emission reduction from this proposal. In fact, the projected increases in prescribed burning activities may offset any reductions and actually increase smoke emissions District-wide on an annual basis.

Nevertheless, expected results from the proposal include more effective smoke management that reduces the potential for smoke impacts from open burning and in particular prescribed and marsh burning activities. Through implementation of the daily "burn authorization system" and the other provisions developed to improve smoke management, the changes will not only improve smoke management on a temporal and spatial basis; they will also address the problem of impacts from too many large fires simultaneously occurring in close proximity to population centers and sensitive receptor sites. In addition, the changes will meet the challenge posed by the projected increases in prescribed burning activities. The anticipated net effect is that emissions would be spread over several days instead of all being emitted on the same day. Areas and populations downwind from these burns would have fewer smoke impacts because smoke will be less likely to drift into populated areas and less concentrated when it does.

SOCIOECONOMIC ANALYSIS

Pursuant to Section 40728.5 of the California Health and Safety Code, the District is required to perform a socioeconomic analysis for certain rule development activities. Specifically, this analysis is required whenever the District intends to propose the adoption, amendment or repeal of a rule or regulation that will significantly affect air quality or emissions limitations.

However, staff have determined that the proposed amendments to Regulation 5 and the proposed open burning fee requirements in Regulation 3 including proposed Schedule R will not significantly affect air quality or emission limitations, and therefore this analysis is not required.

INCREMENTAL COST ANALYSIS

Pursuant to California Health and Safety Code Section 40920.6, the District is also required to perform an incremental cost analysis prior to adopting or amendment of a rule or regulation to meet best available retrofit control technology (BARCT) or feasible measure requirements under the California Clean Air Act. However, staff have determined that the proposed amendments to District Regulation 5 and the proposed open burning fee requirements in Regulation 3 including proposed Schedule R do not add BARCT requirements or involve emission control options, and therefore are not subject to the requirements of this State law.

ENVIRONMENTAL IMPACTS

Pursuant to the requirements of the California Environmental Quality Act (Public Resources Code section 21000, *et seq.*), the District prepared an initial study to determine the potential environmental impacts of the proposed amendments to District Regulation 3: Fees and Regulation 5: Open Burning.

The initial study concluded that the proposed amendments to Regulation 5 would not result in any significant environmental impacts. A CEQA negative declaration is proposed by staff for adoption by the Board in connection with these amendments.

REGULATORY IMPACTS

California Health and Safety Code Section 40727.2 requires the District to identify existing federal and District air pollution control requirements for the equipment or source type affected by the proposed rule or regulation. The District must then note any differences between these existing requirements and the requirements imposed by the proposed change.

Upon review, staff have determined that there are not existing federal air pollution requirements for open burning affected by the proposed amendments. The federal EPA did issue a national policy that addresses how best to achieve national clean air goals, including EPA's national air quality standards for particulate matter and regional haze program, while improving the quality of wildland ecosystems through the use of prescribed burning. Called the *Interim Air Quality Policy on Wildland and Prescribed Fire* (EPA, 1998), this policy has been used by District staff as well as other air districts in the State as a guideline document for prescribed burning activities since it was issued. The *Interim Air Quality Policy* is not a federal regulation or air pollution control requirement, so this Section does not apply.

The only air pollution control requirements imposed on open burning are those incorporated into Regulation 5.

RULE DEVELOPMENT SUMMARY

District staff initiated this rule development effort in late 1999 when the final revisions to the State's Agricultural Burning Guidelines proposed by ARB were being drafted, and how the implementation costs would affect the District became apparent. District staff has conducted two scoping workshops in February and March 2000 to discuss the initial draft of the open burning fee proposal. Since then, staff participated in the final promulgation of the new Guidelines, solicited input from affected parties and began developing the amendments to Regulation 5 and Regulation 3 including proposed Schedule R.

To fulfill a commitment made to landowners in the Suisun Marsh, staff conducted a workshop on August 9, 2001 in Fairfield, CA so that more of the private landowners in the Suisun Marsh had an opportunity to discuss the proposed Regulation 5 amendments and proposed Schedule R. A second workshop was held on August 10, 2001 in San Francisco at the District offices.

Except for some the concerns about any new fee for marsh burning and prescribed burning, the issues raised in the comment letters received after the recent workshops have been addressed or resolved. Staff subsequently met separately with East Bay Regional Park District, SRCD and DFG staff to discuss their issues, and had phone conversations with BLM, Marin Municipal Water District staff to address their issues.

DISTRICT STAFF IMPACTS

Adequate staff resources are essential to implement and administer the proposed amendments to Regulation 5, the District's new smoke management program for

prescribed burning, and to satisfy the new Guidelines. However, these changes are also expected to significantly impact District staff resources.

For the current fiscal year (FY01-02), the budget for the District's new smoke management program for prescribed burning is approximately \$582,000/year. This cost is based on funding 8.50 full-time positions: six air quality inspectors, one air quality specialist, and half of a supervising air quality inspector in the Compliance & Enforcement Division; and one meteorologist in the Technical Services Division. In addition, the use of existing technical support and clerical staff resources is expected to supplement this expenditure.

Under this new program, District staff resources will be used to conduct administrative, compliance and enforcement activities associated with prescribed burning and marsh burning. Several examples of these enhanced activities include inspecting burn sites; evaluating and approving prescribed burn and smoke management plans; developing and revising open burning policies and procedures; making burn forecasts and day-of-burn acreage allocations; collecting burning fees; annual reporting to ARB; enforcement actions; and developing and coordinating outreach with other air districts, fire agencies, DFG, county Agricultural Commissioners, SRCD, and other land management agencies.

CONCLUSIONS

The proposed amendments are designed to improve the management of smoke from prescribed burning and marsh burning and to address current open burning issues. These revisions are also critical for the successful implementation the District new smoke management program for prescribed burning, which is necessary for the District to be consistent with requirements of the new Guidelines.

The proposed amendments are also intended to minimize or eliminate the potential smoke impacts from open burning on populated areas. These changes should also decrease the number of smoke-related public complaints and violations, help prevent visibility degradation, and alleviate public health concerns.

Adoption of this proposal will also improve the enforceability and clarity of the regulation and reduce variance costs associated with two existing types of fires.

Pursuant to Section 40727 of the California Health and Safety Code, regulatory amendments must meet findings of necessity, authority, clarity, consistency, non-duplication, and reference. The proposed amendments are:

- Necessary to limit smoke and particulate emissions from open burning, and to ensure compliance with ARB and EPA burn requirements;
- Authorized by Sections 39002, 40000, 40001, 40702, 40725 - 40728, 41864, 41800 - 41815 of the California Health and Safety Code and 17 CCR 80100 *et seq.*;

- Written or displayed so that meaning of the amendments can be easily understood by the persons directly affected by them;
- Consistent with other District rules, and not in conflict with state or federal law;
- Non-duplicative of other statutes, rules, or regulations; and
- Are implementing, interpreting, or making specific the provisions of California Health and Safety Code Sections 39002, 40000, 40001, 40702, 41864, 41800 – 41815 and 17 CCR 80100 *et seq.*

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